

Managed realignment and ecosystem services: results from two UK sites

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Managed realignment is proposed as a means of dealing with sea level rise and coastal flooding, and also offers opportunities to restore natural coastal ecosystems. However, the value of managed realignment for biodiversity has been questioned, both in terms of ecological integrity and the value of biodiversity in supporting management decisions. The provision of ecosystem services is increasingly cited as a reason for nature conservation and habitat restoration, including managed realignment. For this reason, quantifying the net changes in ecosystem services arising from realignment is important, although it is not straight forward and has not been done widely. Using a toolkit developed by the Cambridge Conservation Initiative, known as TESSA, we carried out ecosystem service assessments at two managed realignment sites in the United Kingdom: Hesketh Outmarsh East on the Ribble Estuary in north-west England, and the Inner Forth Estuary in Scotland. TESSA recommends the collection dedicated data or use of site-appropriate data, and comparing the provision of services in plausible alternative scenarios (in this case, continued agricultural production behind sea defences). Ecosystem services considered included climate change mitigation (in the form of carbon sequestration and greenhouse gas emission), recreation, agricultural production, and flood protection. The monetary value of farming tends to be outweighed by the value of carbon in accreted sediments, although this is sensitive to both carbon pricing and the rate of accretion. Management decisions are also likely to involve political aspects, rather than simply economic considerations, so the results of these assessments will be useful for decision-makers, but not necessarily definitive.